ABSTRACT

A method for determining a cardiac shock strength, for example the programmed first-therapeutic shock strength of an implantable cardioverter defibrillator (ICD), including the steps of sensing a change in a T-wave of an electrogram with respect to time such as the maximum of the first derivative of a T-wave of an electrogram; delivering a test shock by (i) delivering a test shock at a test-shock strength and at a test-shock time relating to the maximum of the first derivative of the T-wave with respect to time; and (ii) sensing for cardiac fibrillation. If fibrillation is not sensed, test-shock delivery is repeated at the same test-shock strength and at specific, different test-shock times relating to the maximum of the first derivative of the T-wave. If fibrillation is still not sensed, the shock strength is decreased and test shocks are repeated at the same specific test shock times relative to the maximum of the first derivative of the T-wave. And if fibrillation is sensed, the programmed therapeutic shock strength of the ICD is set as a function of the incrementally greater test-shock strength. Also disclosed is an apparatus for selecting a programmed first-shock strength of an ICD, including a shock subsystem for delivering therapeutic shocks and test shocks to the heart, and a ULV subsystem connected to the shock subsystem, to provide test shocks of test-shock strengths and at test-shock times relating to the maximum of the first derivative of the T-wave with respect to time, and to

determine the therapeutic shock strength of the ICD as a function of the test-

shock strengths.

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